AUSTRALIAN STANDARD

# RULES FOR

# THE DESIGN, CONSTRUCTION, TESTING, INSPECTION AND INSTALLATION OF BOILERS AND PRESSURE VESSELS

known as the

SAA BOILER CODE

# AS 1200—1978

First published ..... 1972
Revised ..... 1978

PUBLISHED BY THE STANDARDS ASSOCIATION OF AUSTRALIA
STANDARDS HOUSE, 80 ARTHUR ST, NORTH SYDNEY, N.S.W.

ISBN 0 7262 4329 9

# PREFACE

This standard was prepared by the Association's Committee on Boilers and Unfired Pressure Vessels as a revision of AS 1200—1972.

AS CB1, the original 'SAA Boiler Code' was initially issued in 1931 to provide detailed guidance on the practices to be adopted in the design, construction and testing of boilers, unfired pressure vessels and associated equipment, and also to assist in obtaining uniform statutory requirements throughout Australia. It was revised and re-issued several times, and immediately prior to the publication of the first metricated standards in 1972 it consisted of the following parts:

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| Part I—1962 | Boilers Other than Water Tube Boilers and Locomotive Boilers for Railway Purposes |
| Part III—1957 | Locomotive Boilers for Railway Purposes |
| Parts I-IV—1952 | Boilers and Unfired Pressure Vessels and Their Appurtenances |
| Part V—1951 | Welding |

When the first metricated parts of the 'SAA Boiler Code' were published in 1972, the opportunity was taken to prepare and publish AS 1200 as a central reference to all parts of the 'SAA Boiler Code' as it is colloquially (and statutorily) known.

Except for some obsolete types of boilers, e.g. riveted boilers and locomotive boilers, boilers previously covered in the various Parts of AS CB1 are covered now in the metricated codes listed in Section 2. When the pressure piping codes AS CB15 and AS CB18 are replaced by a combined pressure piping code (in the course of preparation), the program for metrication of the 'SAA Boiler Code' will have been completed.

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STANDARDS ASSOCIATION OF AUSTRALIA

# Australian Standard
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## FOREWORD

The application of the several standards that form the 'SAA Boiler Code' may give rise to a constant need for consideration of unusual and other designs which do not comply in all respects with the requirements of the relevant standard or which are not adequately covered in any standard.

If it is desired to use materials or methods which do not comply with the requirements of or are not adequately covered by the relevant standard, designs incorporating such departures should be submitted to the relevant Inspecting Authority for approval. Where necessary, SAA Committee ME/1, Boilers and Unfired Pressure Vessels, may be asked to serve in an advisory capacity in the determination of the suitability of any such designs. (See also Rule 1.4.)

It is emphasized that this activity of the committee is limited to technical aspects of the Code and that the committee has no power or jurisdiction to adjudicate upon contractual matters or regulatory matters or the duties of any persons concerned with the subject of the submission.

Methods developed by Committee ME/1 for communicating its findings are as follows:

*COMMITTEE OPINION.* A Committee Opinion is issued in reply to a specific enquiry from a specific organization and applies only to the set of circumstances referenced in the Committee Opinion. Copies of Committee Opinions are sent to the relevant Inspecting Authorities and may be used by the Authorities as the basis for approval of the particular application or for approval of similar submissions from other organizations. A list of current Committee Opinions is given in Appendix B. extended sentence see Amdt.1 :1979

NOTE: Committee Opinions were previously known as 'Rulings'.

*INTERPRETATION.* An Interpretation is issued when the committee judges the subject of an enquiry to be of sufficient importance or probable wide application. A postal ballot is held and the reply is published as an Interpretation which is to be regarded as equivalent to an Amendment to the relevant standard, effective from the date of issue. A list of current Interpretations is given in Appendix A.

Where the committee judges the subject to be suitable, Committee Opinions and Interpretations may be incorporated in an Amendment to the relevant standard, whereupon the Committee Opinion or Interpretation will be withdrawn. If the timing is appropriate, the finding of the committee may be issued directly as an Amendment.

# SECTION 1. SCOPE AND GENERAL

**1.1 SCOPE.** These Rules together with those of the standards listed herein (hereinafter referred to as 'the Code') constitute the requirements to which pressure equipment has to be designed, constructed, tested, inspected and installed in order to comply with the 'SAA Boiler Code'.

**1.2 PURPOSE.** The purpose of the Code is to provide a ready reference to the requirements of pressure equipment and thus promote safe and economic application leading to uniformity in engineering practice throughout the Commonwealth of Australia and its Territories, but it is not to be taken as in any way overriding the requirements (or exclusions) of the particular standard (see Section 2).

NOTE: It is recommended that, where appropriate, reference be made only to the specific standard, e.g. AS 1210, and not to the general reference AS 1200.

**1.3 INTERPRETATION OF THE CODE.** If any ambiguity be found, or if any doubt arise as to the meaning or effect of any part of the Code or whether anything ought to be done or not done in order to comply fully with the Code, the question should be referred to SAA Committee ME/1, Boilers and Unfired Pressure Vessels, for an interpretation of the intent of those particular parts of the Code.

NOTE: The committee does not have any power or jurisdiction to adjudicate on contractual matters.

**1.4 NEW DESIGNS, MATERIALS AND CONSTRUCTION METHODS.** The Code does not prohibit the use of materials (see Appendix C for code policy for materials) or methods of design or construction that are not specifically referred to herein. (See Foreword for the procedure for obtaining approval in such cases).

**1.5 STATUTORY AUTHORITY REQUIREMENTS.** Since the use of most boilers and pressure vessels in the Commonwealth of Australia and its Territories is subject to the controls of Statutory Authorities and various other governmental bodies, their requirements have to be incorporated before permission to operate a boiler or pressure vessel is obtained. Although compliance with the 'SAA Boiler Code' will normally be sufficient condition to obtain such permission, other requirements may be imposed. The owner of the vessel therefore should ensure that the appropriate authorities having jurisdiction in the area of operation are consulted.

**1.6 DEFINITIONS.** For the purposes of the Code, the following definitions apply:

**1.6.1 Boiler**—any vessel or vessels including interconnecting parts wherein steam, or other vapour, is or is intended to be generated or water, or other liquid, is or is intended to be heated at a pressure above that of the atmosphere by the application of fire or the products of combustion or by electrical means. It shall also include valves, gauges and other fittings, and where consistent with the requirements of the Code shall include the boiler setting and associated equipment. It does not include a fully flooded system or pressurized system where the water is or is intended to be heated to a temperature not greater than 99°C, or other liquid is or is intended to be heated to a temperature not more than 1°C below the normal atmospheric boiling point temperature of the liquid. Boilers are divided into three types, viz fire-tube boilers, water-tube boilers, and miscellaneous boilers, as follows:

(a) *Fire-tube boiler*—a boiler in which the fluid to be heated is contained in a vessel which may be directly heated and/or contain tubes in which combustion takes place or through which products of combustion flow.

(b) *Water-tube boiler*—a boiler in which the heat transfer takes place through the wall of tubes inside which the fluid to be heated flows or circulates and which are exposed externally to combustion or products of combustion.

(c) *Miscellaneous boilers*—boilers which are not classified as fire-tube or water-tube boilers.

**1.6.2 Unfired pressure vessel**—a vessel subject to internal pressure or external pressure including interconnecting parts and components up to the first point of connection to connected piping and fittings by bolting, screwing, welding or by other means, but does not include those vessels wherein steam or other vapour is or is intended to be generated or water or other liquid is or is intended to be heated by the application of fire or the products of combustion or by electrical means.

Such vessels may be open to the atmoshpere, e.g. by means of an overhead liquid column, but are thereby subjected to pressure.

NOTE: It is intended that the above definition include vessels such as heat exchangers, evaporators, air receivers, steam type digesters, steam type sterilizers, autoclaves, reactors, calorifiers, blowdown tanks (where applicable), and pressure piping components such as separators, strainers, etc.

**1.6.3 Integral piping**—that piping within the whole of the circulatory system of the boiler between the feed inlet valve and the main stop valve, and, for a reheater, between the reheater inlet header and the reheater outlet header. In addition, certain pipework connected to boiler pressure parts or to the pipes forming the main circulatory system, but not to external equipment or to atmosphere, is included in this category. Such pipework includes—

(a) integral boiler sootblower piping to the drain valves;

(b) blowdown, drain, sampling and air release piping between the point of take-off and the first valve; and

(c) boiler unit instrument and impulse piping, including piping to water gauges, alarms and transmitters.

Integral piping does not include tubing forming the heating surfaces in individual components, such as reheaters, superheaters, etc.

**1.6.4 Non-integral piping**—piping covered by AS CB18, Part 1 and AS 1135 (see Rule 2.2.5.2).